

ABSTRACT

The IT & product development section which is part of the Commercial Engineering division at PT. The Indonesian Telecommunications Industry (INTI) is currently designing an antenna for communication between train cars. Which later this antenna is expected to be able to connect every existing network on every train car so that they are connected to each other. The need for communication between train cars using aesthetic microstrip antennas is currently still difficult to implement. This happens because the aesthetics of microstrip antennas for communication between railroad cars has not been designed. Therefore, an aesthetic microstrip antenna design in the form of the KAI logo will be carried out which works at a frequency of 2.4 Ghz for communication between train cars. This antenna will be installed on the railroad wall in each carriage which is approximately 1 meter away.

This Final Project aims to develop a communication system between railroad cars to increase operational efficiency and security. The development of communication technology between carriages utilizes wireless networks and special communication protocols. Thus, every car on the train can exchange information. Communication between train cars has the main advantage of more accurate operational monitoring and can improve safety for passengers and crew on the train. With this communication system, trains can operate more efficiently and can respond to situations more quickly.

The results of measuring the microstrip antenna in the form of the Indonesian Railways logo with a working frequency of 2.4 GHz. For an antenna with a side feedline, the return loss is -37.6 dB and the VSWR is 1.03. If it is integrated with an iron plate, the return loss is -31.58 dB and the VSWR is 1.06. On the antenna with the lower feedline, the return loss is -62.92 dB and the VSWR is 1.5. If integrated with an iron plate, the return loss is -15.26 dB and the VSWR is 1.28.

Keywords: *antennas, communications, train*